TV2 Product Summary

TWO DIMENSIONAL INSTRUMENTS, LLC
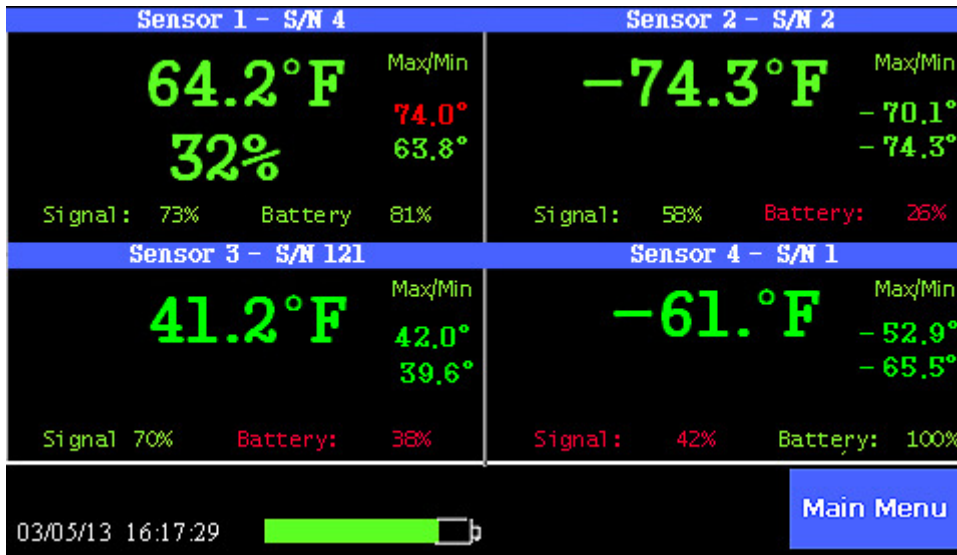
Monitor/Alarm with Easy Touch™ for cryogenic freezers

- **Easy to install** *(installs in minutes).*
- **Easy to use** *(easy to read chart).*
- **Easy to download to a computer** *(cable & software included).*
- **Works with any refrigerator or freezer.**
- **Stores & displays 1.5 years of temperature history.**
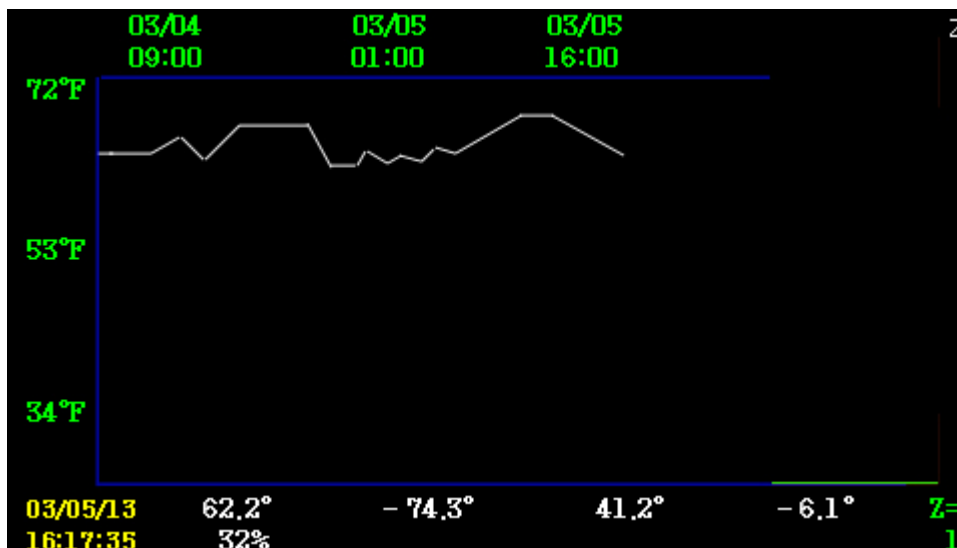- **Phone call or email alert**

Position up to four sensors in regular or super-cold freezers to monitor, log and chart the temperature history.

Each sensor has its own high and low alarm which triggers an interior alarm and closed the relay to trigger phone calls or email alerts.

It complies with 21 CFR 11, FDA, CDC, and JCAHO standards storing over a year of temperature history that can be downloaded to a computer for archiving and/or a printed chart.
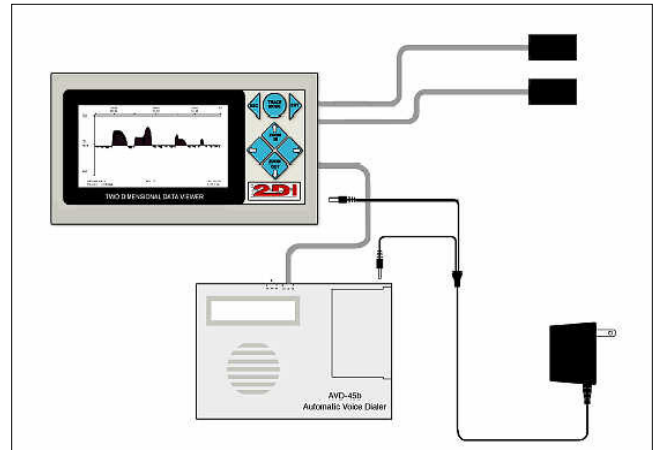
The display shown above is the status screen showing the temperature and humidity for an operating room, two super cold freezers and a refrigerator. The maximum and minimum temperature for each is also displayed. To see a chart/log of any temperature **<u>just touch</u>** it on the display and a chart will appear showing what happened last night, and last week, and last month and last year.

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Because the display is easy to read and the chart easy to interpret, each employee becomes part of your quality control effort every time they glance at it. If the temperature was ever unsafe it is immediately obvious. The TV2 can be used with four temperature or temperature/RH sensors for maximum value.

Setup

The following are suggested settings for a -20° freezer and a -80° refrigerator.

Suggested settings for –20°C Freezer and a 4°C Refrigerator:

Freezer Probe #1	Refrigerator Probe #2
Sample data every 00:10:00 HHMMSS Type of averaging: Med Maximum Display Temperature 0°C Minimum Display Temperature -25°C	Sample data every 00:10:00 HHMMSS Type of averaging: Med Maximum Display Temperature 20°C Minimum Display Temperature -100°C

Alarm Settings:

Sensor 1 – Thermocouple Trigger relay for 00:25 MM:SS If temperature> -5 ° for more than 00:30:00 HHMMSS If temperature<-30° for more than 00:20:00 HHMMSS	Sensor 2 – Thermocouple Trigger relay for 00:25 MM:SS If temperature>-65° for more than 00:30:00 HHMMSS If temperature<-200°for more than 00:20:00 HHMMSS

The alarm: In addition to the temperature alarm, the ***power failure alarm*** will also sound (if enabled) and close the relay if the unit begins to operate on battery power. The TV2 will continue to operate on its internal battery for up to 48 hours.

Downloading data:
The ThermaViewer will hold and chart approximately 1.5 years of temperature history for each sensor with the above settings. If you plug the TV2's USB cable into your computer or use the Ethernet connection to attach to your Local Area Network you can autodownload temperatures in real time to your network or computer.

APPLICATON NOTE: 102